

PROCEEDINGS
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NEW CLADOCERA FROM NEW ENGLAND.*

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Cooperating with the investigations of the New England Lakes conducted by the U. S. Bureau of Fisheries, the writer has found in the plankton of some of the waters visited two species of Cladocera which do not seem to have been previously described. One of these is the type of a new genus. A more complete description of these species with figures may be looked for at a later date, probably in one of the publications of the United States National Museum.

FAMILY MACROTHRICIDAE Norman and Brady.

GENUS PAROPHRYOXUS gen. nov.

Type.—*Parophryoxus tubulatus* sp. nov.

Oval or elliptical, evenly rounded anteriorly, produced posteriorly, tube-like. Cervical sinus present. Sides concave. With distinct rostrum and keel from near tip of rostrum to near posterior end. Eye and ocellus present. Antennules long, not greatly curved, with lateral sense seta, and distal olfactory setae, otherwise without conspicuous armature. Antennae of female with setae $\begin{smallmatrix} 0003 \\ 003 \end{smallmatrix}$, spines $\begin{smallmatrix} 0101 \\ 001 \end{smallmatrix}$; of male, setae $\begin{smallmatrix} 0113 \\ 003 \end{smallmatrix}$, spines as for female. Labrum with anterior and posterior lobes curved toward each other forming a window-like opening. Maxillae with three teeth; feet, six. Postabdomen slender, triangular, both sides irregularly sinuous. Armature obsolescent, claws long, with two basal spines.

Remarks.—The superficial resemblance of specimens of this genus to *Ophryoxus* disappears on closer examination. It lacks the conspicuous posterior spine, the bristling antennules, the fleshy processes upon the labrum, and the heavy armature of the postabdomen of *Ophryoxus*.

Parophryoxus tubulatus sp. nov.

Type.—To be deposited in the U. S. National Museum, from Anonymous Pond (Crystal Lake), Maine, September 5, 1908. Collected also in Umbagog Lake, Maine and New Hampshire, July-August, 1905; Sebago

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Lake and Thomas Pond, Maine, July-August, 1906, 1907, 1908. Rare in weedy, shallow margins or coves of lakes.

Description.—Female. Oval, evenly rounded anteriorly, dorsal and ventral margins approaching each other and produced posteriorly, tube-like. Dorso-posterior angle acute but not spined; ventro-posterior angle sharp or rounded. Posterior margin low, $\frac{1}{5}$ to $\frac{1}{12}$ height, spinulose.

Keel low, continuous; cervical sinus well developed. Sides of test longitudinally concave from cervical sinus $\frac{1}{3}$ the length of the body; upper and lower margins of concavity thickened and ridged. Fornix broad, horizontal limb with sides parallel, curving upward over antennae and eye, and the vertical limb abruptly curving downward to near end of rostrum. Antennules ten times as long as thick; lateral seta $\frac{1}{4}$ from base; six short olfactory setae, two four times their length and one five times as long; the last nearly equalling the antennule; otherwise armed with very minute denticles and spinules only. Antennae not strong, setae and rami equal, reaching to posterior third. Labrum with fenestrum of size and position to fit the grinding surface of the mandibles. Maxillae with three teeth, the distal sparsely ciliated. Feet very much like *Ophryoxus*. Postabdomen long, tapering to a point, dorsal and ventral margins both irregularly sinuous. The dorsal or anal margin armed with eight to eleven minute spinules distally. Claw $\frac{1}{2}$ the length of the postabdomen, evenly and slightly curved, with two basal teeth, the proximal smaller.

Male. Immature males only have been found, resembling immature females in their greater irregularity of outline, and in other general features, save the antennal formula for setae, which are five on the dorsal ramus, a seta being on each of the second and third segments, additional to the three on the distal segment ($\frac{0}{0}\frac{11}{0}\frac{3}{3}$).

Measurements.—Egg bearing female from Anonymous Pond, Maine, September 5, 1908. Length 1.14 mm.; height .82 mm.; posterior height .12 mm.

FAMILY CHYDORIDAE Leach (LYNCEIDAE Baird).

Chydorus bicornutus sp. nov.

Type—To be deposited in the U. S. National Museum, from Sebago Lake, Maine. Collected in Umbagog Lake, July-August, 1905, Maine and New Hampshire; Sebago Lake, Songo River, Panther Pond, Maine, July-August, 1906, 1907, 1908. Found in small numbers in weedy margins and coves of lakes and lagoon-like arms of rivers.

Description. Female.—Shape of body or test proper from side view, rounded with ventral margin sharply ventricose; from above broadly oval, from the front broadly oval, but sides concave dorsally.

The entire exoskeleton supports a most remarkable development of horns and ridges and cells, somewhat as follows: From each valve of the test there stands out a great horizontal horn, curving slightly posteriorly, often half the width of the body proper. From this horn there run two high ridges forward, and also two ridges over the back from horn to

horn. An area on the back immediately anterior to the interspinal ridges is bounded laterally by two other ridges. Near the anterior limit of the area, these ridges, after giving off on each side a high lateral branch, sharply converge and unite in the median line, forming a short crest where head and body meet; then diverging on the head they bound or enclose a large area in front, and continue down to the tip of the rostrum. On the lower half of each valve are four more high ridges, taking their origin near each other at the upper end of the ascending anterior margin of the valve, and running more or less parallel to the margin, but the second and fourth from the margin not running the whole length of the valve. The first and third, however, unite at the dorso-posterior angle, run forward on the back to the interspinal ridges, flaring outward; thus the united ridges of opposite sides bound a dorsal area posterior to the interspinal ridges. Between parallel ridges, except those arising from the lateral horns, there pass partitions, forming large, deep, rectangular cells; within the areas as described are similar cells of various sizes and shapes; laterally above the marginal ridges are other deep hexagonal cells of various sizes.

Eye large, with few facets, ocellus adjacent. Rostrum long, acute, covered with ridges and cells similar to those of the valves. Labrum from side view with anterior lobe blunt, posterior lobe digitate, and ciliated distally. Maxillae with two heavily ciliated teeth. Feet, five, very similar to those of *C. faviformis* Birge, which the deep faviform cells causes it to resemble. Postabdomen broad, rounded distally, with twelve spines on dorsal or anal border. Claw strong, crumpled, basal teeth two, the proximal smaller.

Male, unknown.

Measurements.—Length of body proper about .55 mm., add $\frac{1}{8}$ to $\frac{1}{4}$ for ridges; width, about .45 mm., add $\frac{1}{8}$ to $\frac{1}{4}$ for horns; height about .50 mm., add. $\frac{1}{4}$ to $\frac{1}{2}$ for ridges.